WBS 4.0 BTeV Project

Risk Analysis Document

BTeV Document 3006

April 25, 2004

Table 1: TeV Project Risk Analysis

Project name: WBS 4.0 Preparer's name: JB & SS Date: 4/25/04

WBS number	Risk Event	Probability	Impact	Severity
1.0	Technology retirements	0.7	Cost 0.8	0.56
All	Funding profile changing from expectation	0.9	Schedule 0.4	0.36
All	Shutdown Schedule Changing	0.9	Schedule 0.2	0.18
1.0, 2.0	Unfavorable exchange rate changes	0.5	Cost 0.2	0.10
1.0, 2.0	Lack of FNAL technical staff	0.2	Schedule 0.2	0.04
1.0	Lack of University personnel	0.1	Schedule 0.2	0.02
1.0	Vacuum Problems in C0	0.02	Schedule 0.8	0.02
1.0	Robustness & Maintainability of Detector	0.1	Schedule 0.2	0.02
1.0	Detector pieces damaged in transportation	0.05	Scope 0.2	0.01
1.0	Detector pieces damaged in installation	0.05	Scope 0.2	0.01
2.0	Machine parts damaged in installation	0.05	Schedule 0.2	0.01
2.0	Poor Beam Conditions in C0	0.02	Schedule 0.2	0.004
1.0	Radiation Damage	0.02	Cost 0.2	0.004

Table 2: Risk Listing with Mitigation Strategies

WBS number	Risk Event	Response/mitigation strategy
1.0	Technology retirements	Purchase the QIE & ASDQ chips as soon as possible using early funding
All	Funding profile changing from expectation	Continue to try and lower costs: obtain quotes from more vendors where possible; think of different implementation strategies
All	Shutdown Schedule Changing	Develop alternate installation strategies if schedules change; develop a plan to use unexpected shutdowns on short notice
1.0, 2.0	Unfavorable exchange rate changes	Work with multiple vendors using different currencies whenever possible
1.0, 2.0	Lack of FNAL technical staff	Work with lab to ensure adequate staffing especially during shutdowns. Organize University groups to help
1.0	Lack of University personnel	Keep close contact with University groups to make sure that staffing requirements are covered especially during shutdowns. Try to add more collaborators
1.0	Vacuum Problems in C0	Continue and refine mockup vacuum system tests
1.0	Robustness & Maintainability of Detector	Develop a maintenance plan for the entire detector. Have a workshop to review this plan. Ensure adequate access to service devices
1.0	Detector pieces damaged in transportation	Shipping method will be signed off by the project mechanical engineer. Funds are in 1.10 thus assuring that all shipments will be controlled by the Project Office
1.0	Detector pieces damaged in installation	Review all installation procedures widely. Continue having installation workshops. Assign outstanding people to supervise installation
2.0	Accelerator components damaged in installation	Review all installation procedures widely
2.0	Poor Beam Conditions in C0	Continue with a rigorous accelerator physics effort and beam halo task force. Improve MARS simulation. Continue to track Run II experiences and be aware of any mitigations used
1.0	Radiation Damage	Test any questionable components in beams prior to installation and improve MARS calculations of expected dose